

Fig. 1

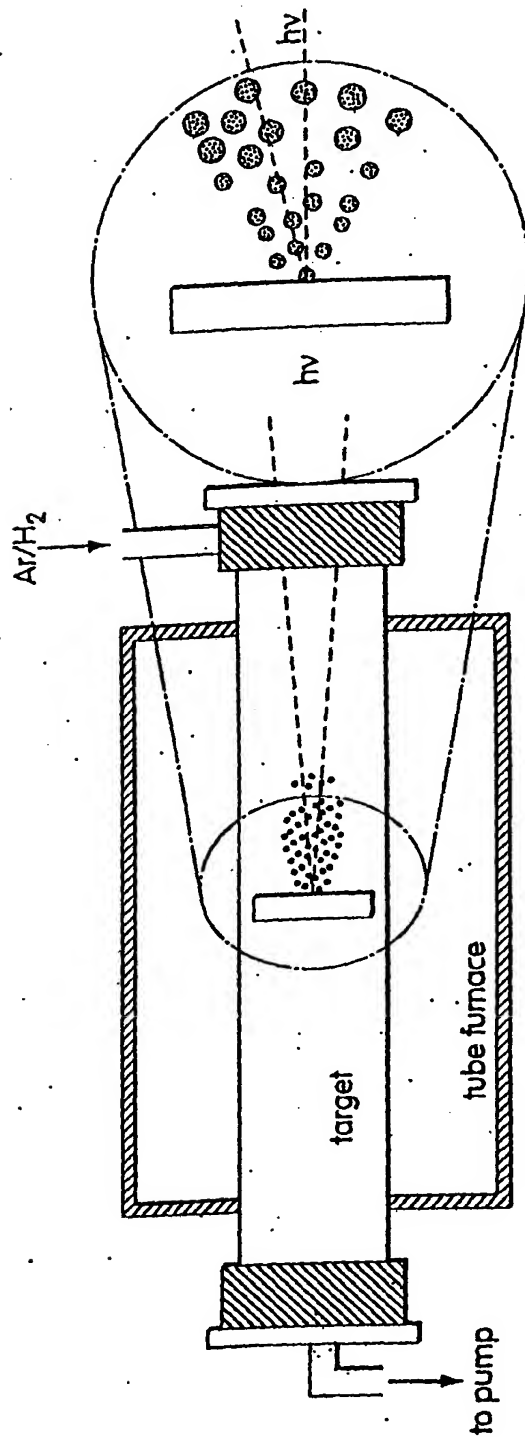


Fig. 2

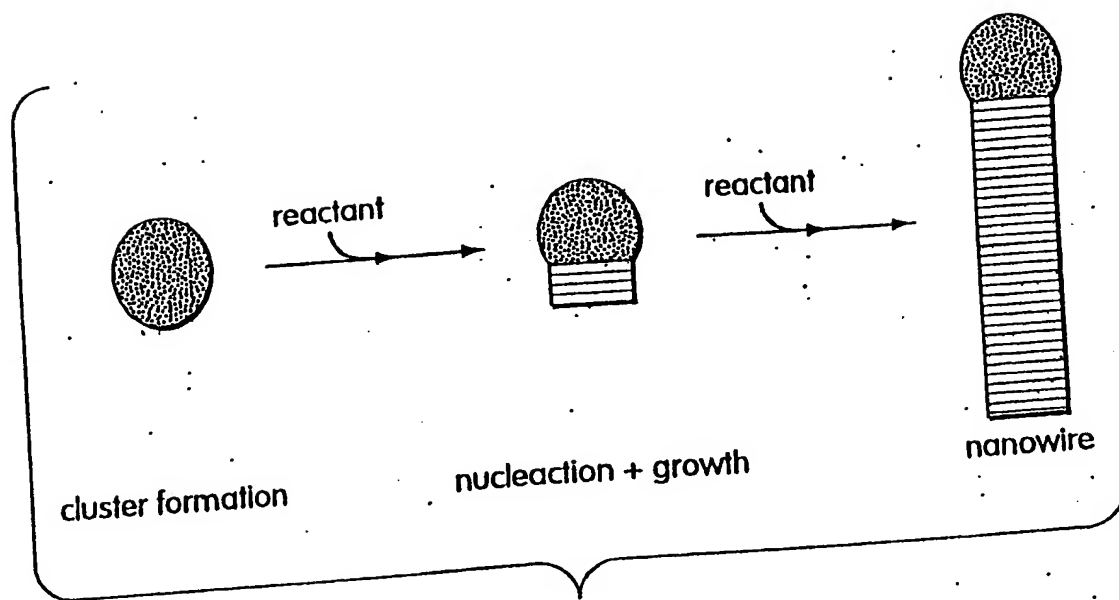


Fig. 3

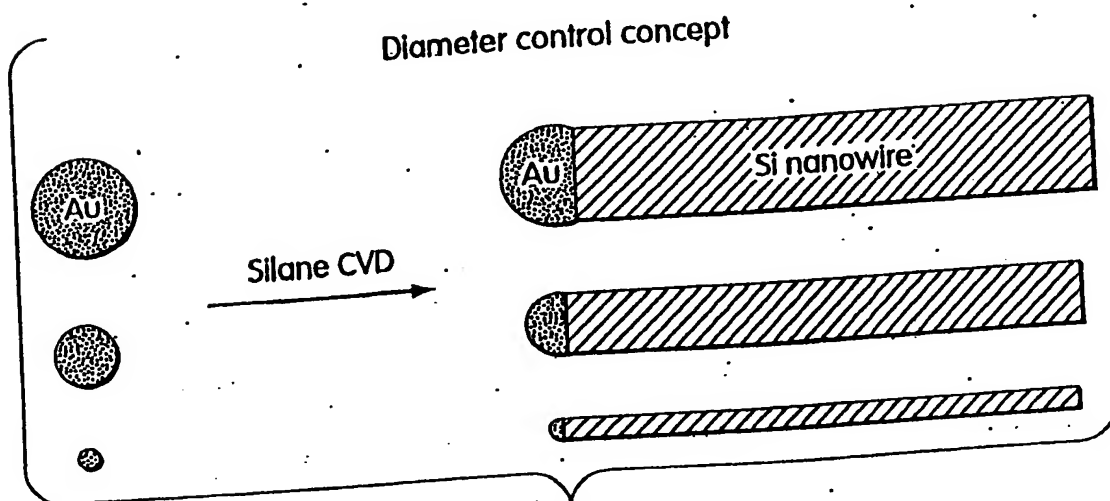


Fig. 4

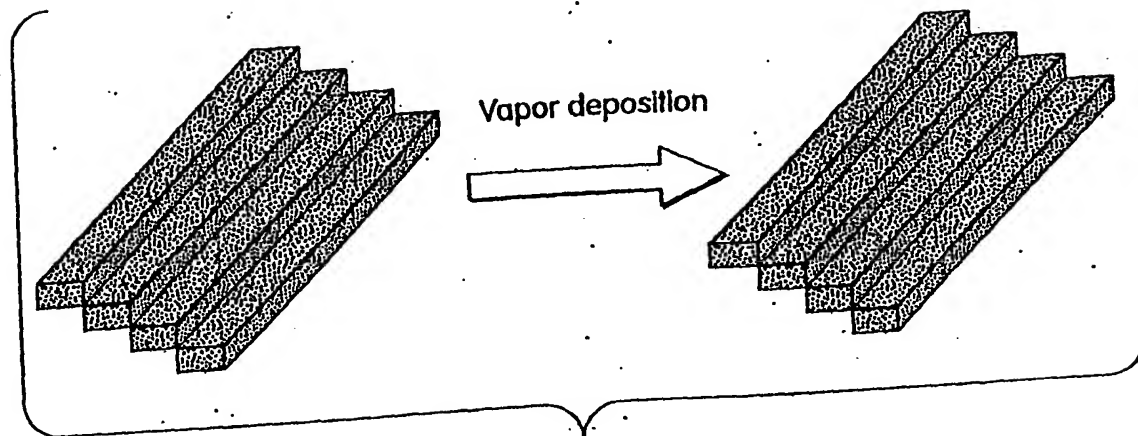


Fig. 5

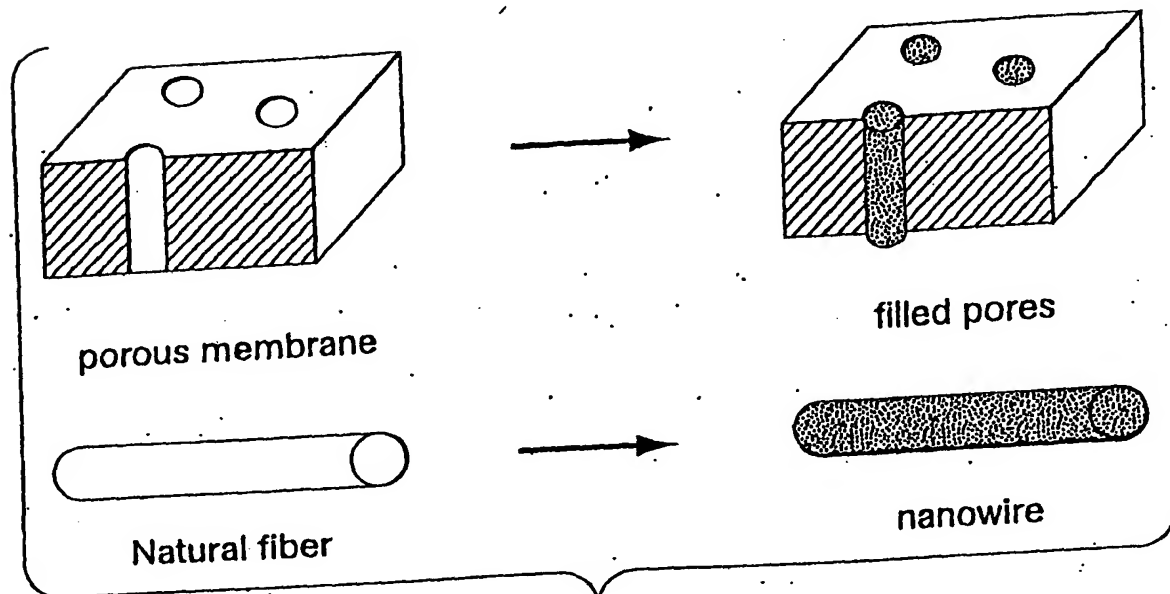


Fig. 6

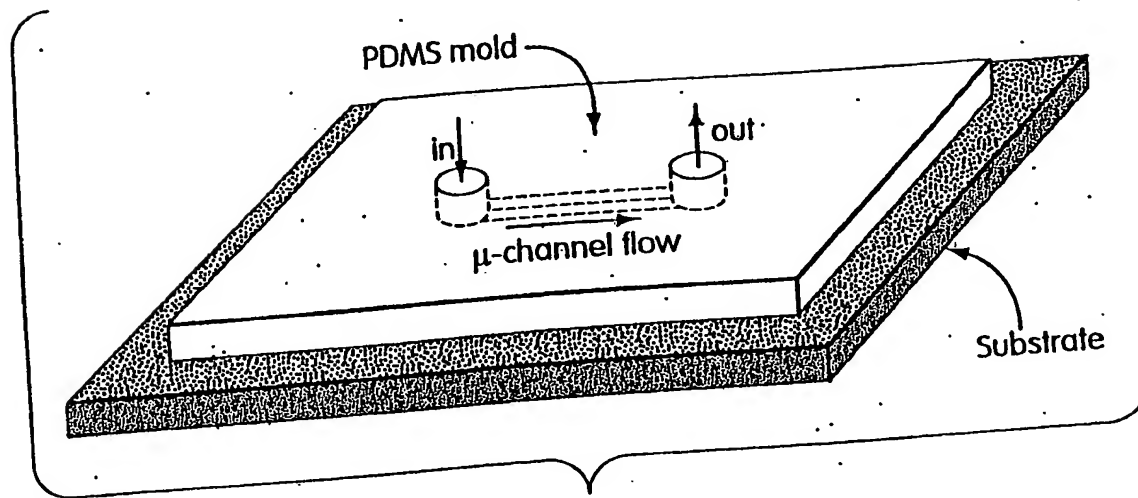


Fig. 7A

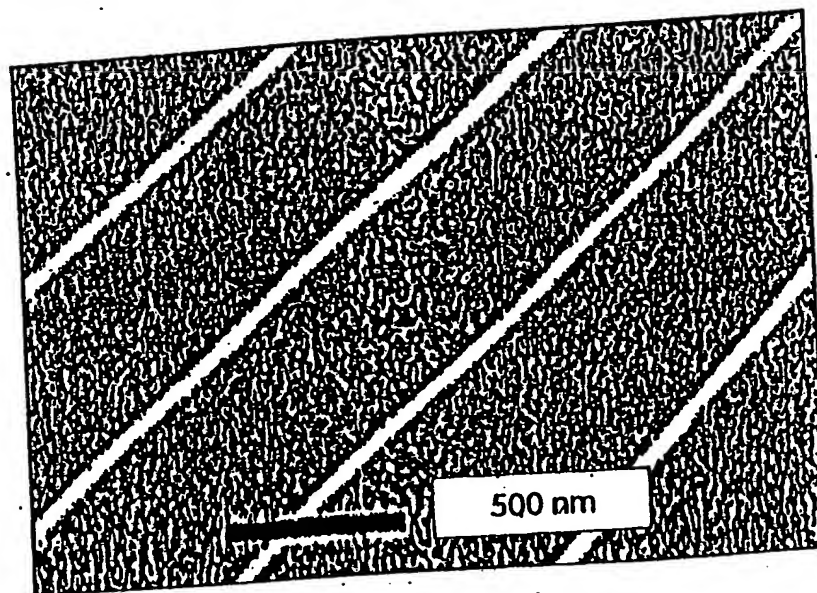


Fig. 7B

## I. DIRECT GROWTH

(a) DEFINE NANOCUSTER CATALYST



(b) INITIAL LCG SEMICONDUCTOR GROWTH



(c) SECOND LCG SEMICONDUCTOR GROWTH

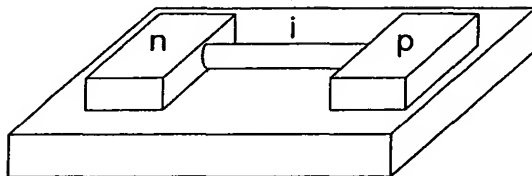


(d) REPEAT (b) OR (c) AS DESIRED



## II. POST-SYNTHESIS FUNCTIONALIZATION

(a) FABRICATE NANOWIRE DEVICE



(b) INTRODUCE DOPANTS BY ANNEALING

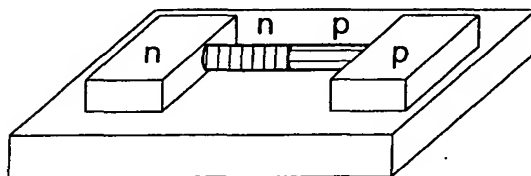


Fig. 8

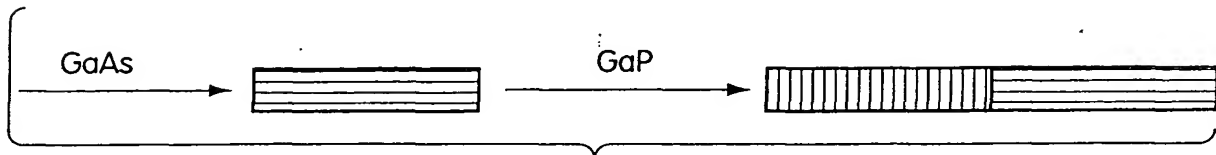


Fig. 9A

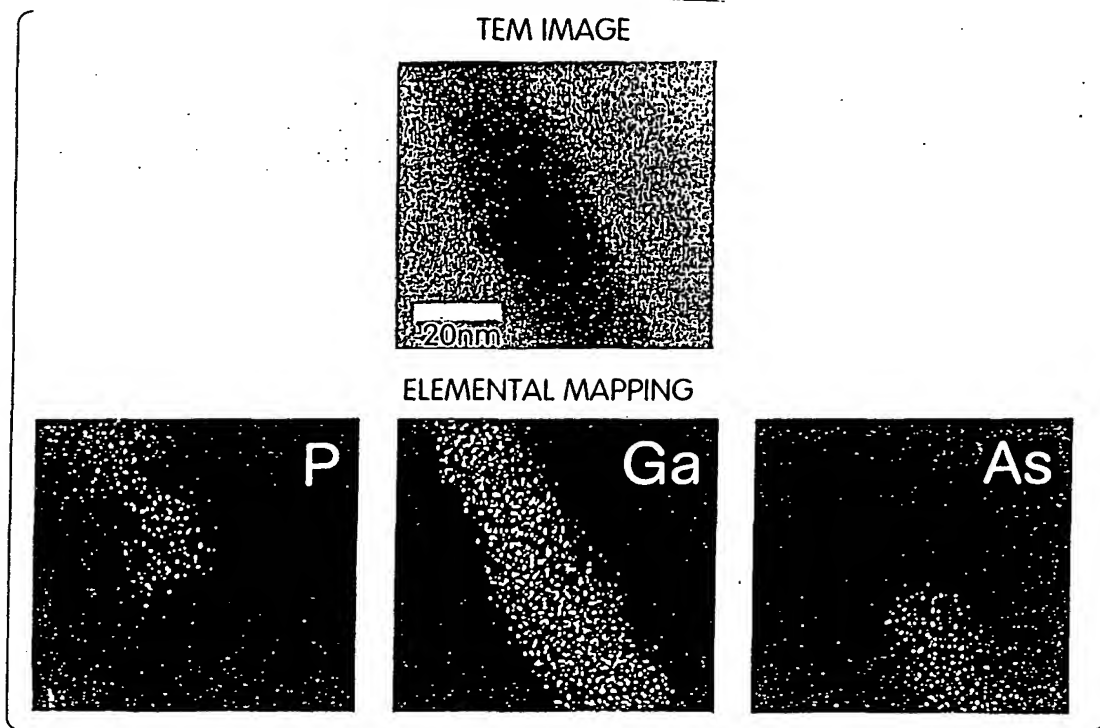


Fig. 9B

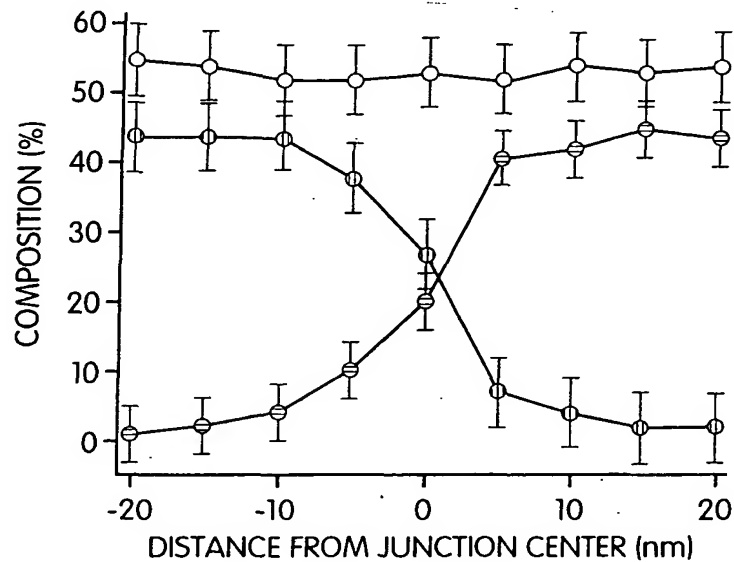


Fig. 9C

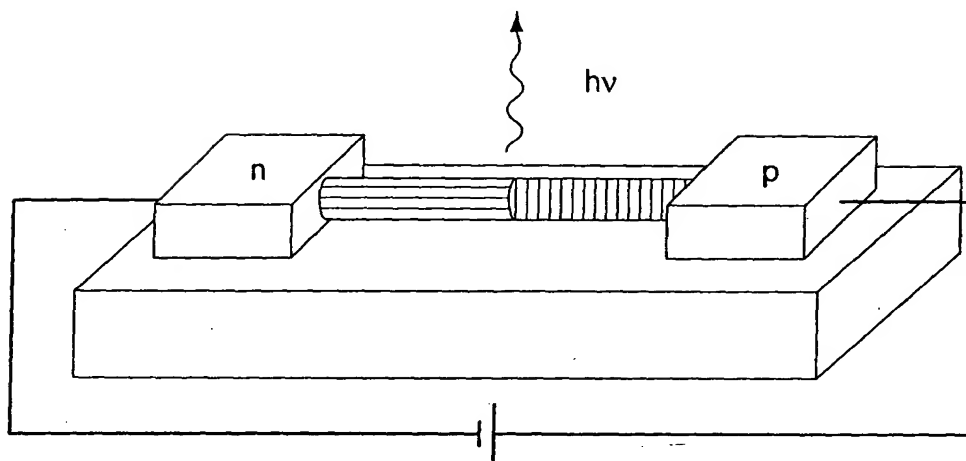


Fig. 10A

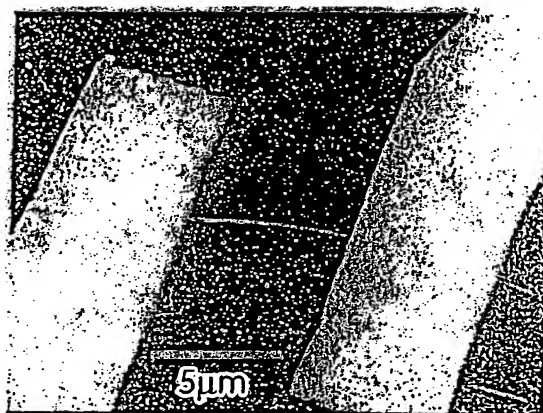


Fig. 10B

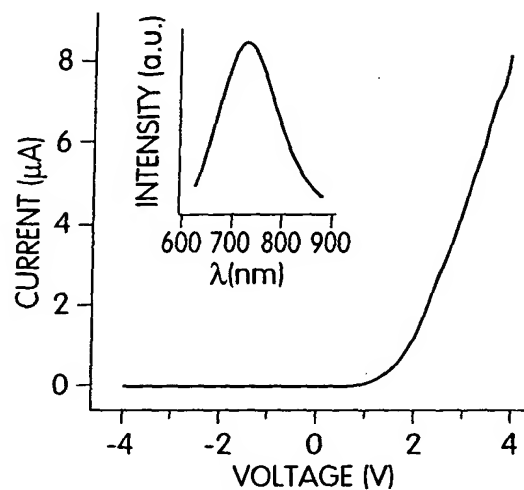


Fig. 10C

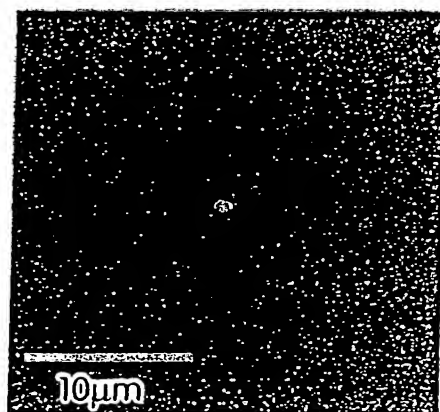


Fig. 10D



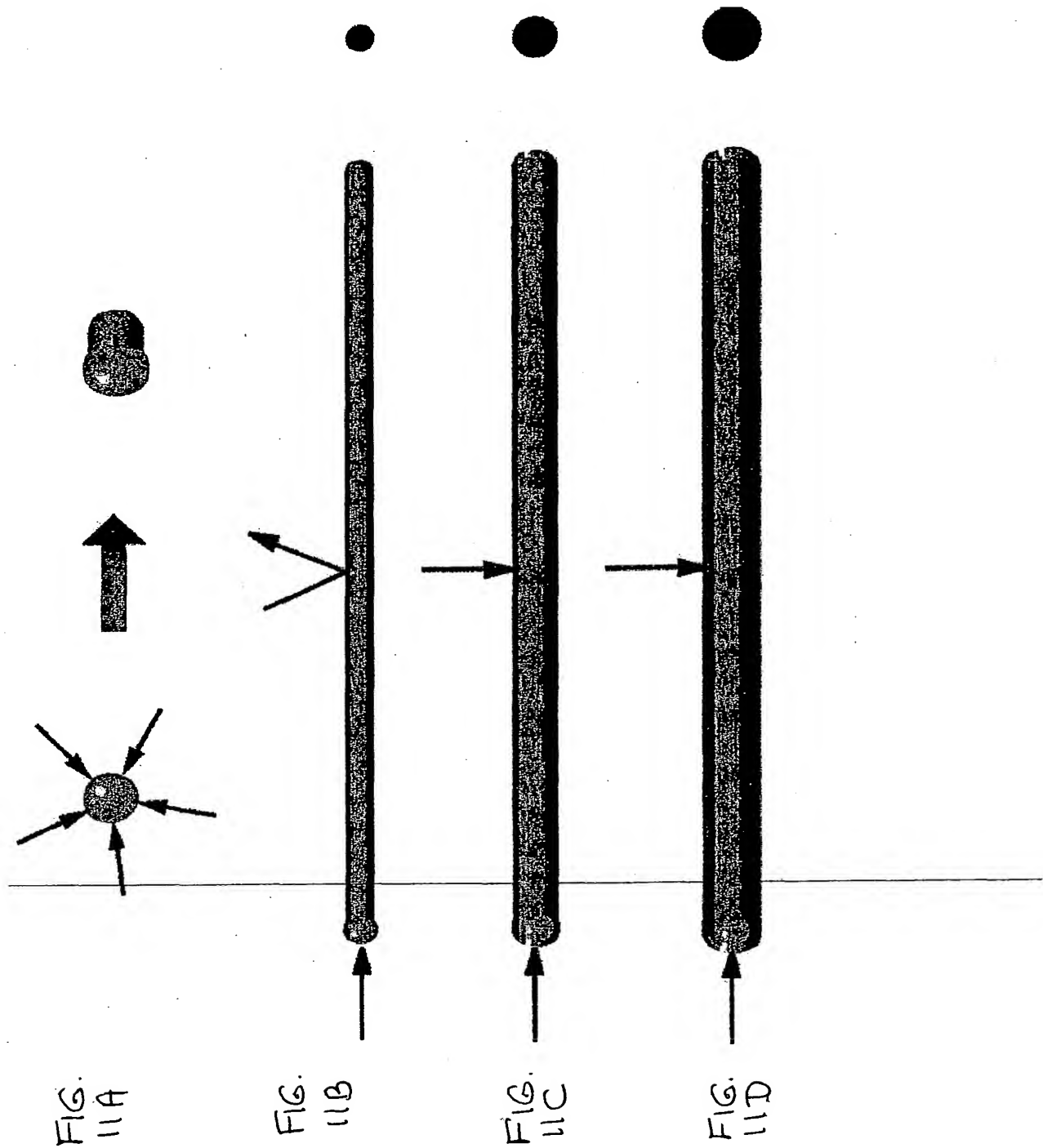
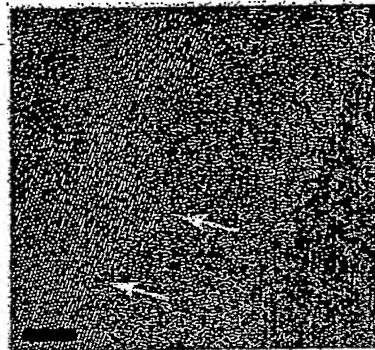
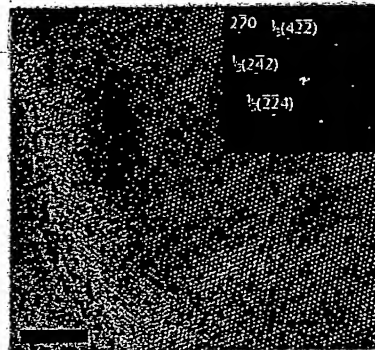
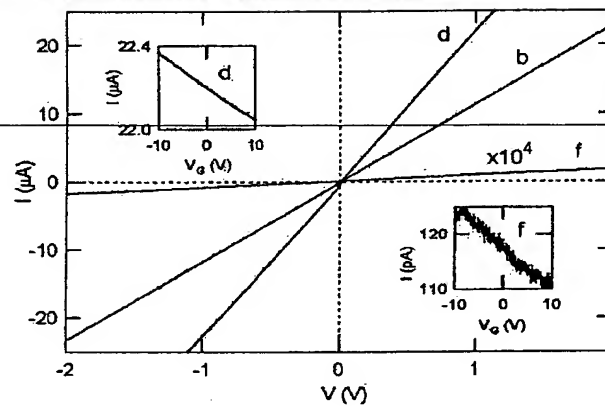


FIG.  
12AFIG.  
12BFIG.  
12CFIG.  
12DFIG.  
12EFIG.  
12FFIG.  
12G

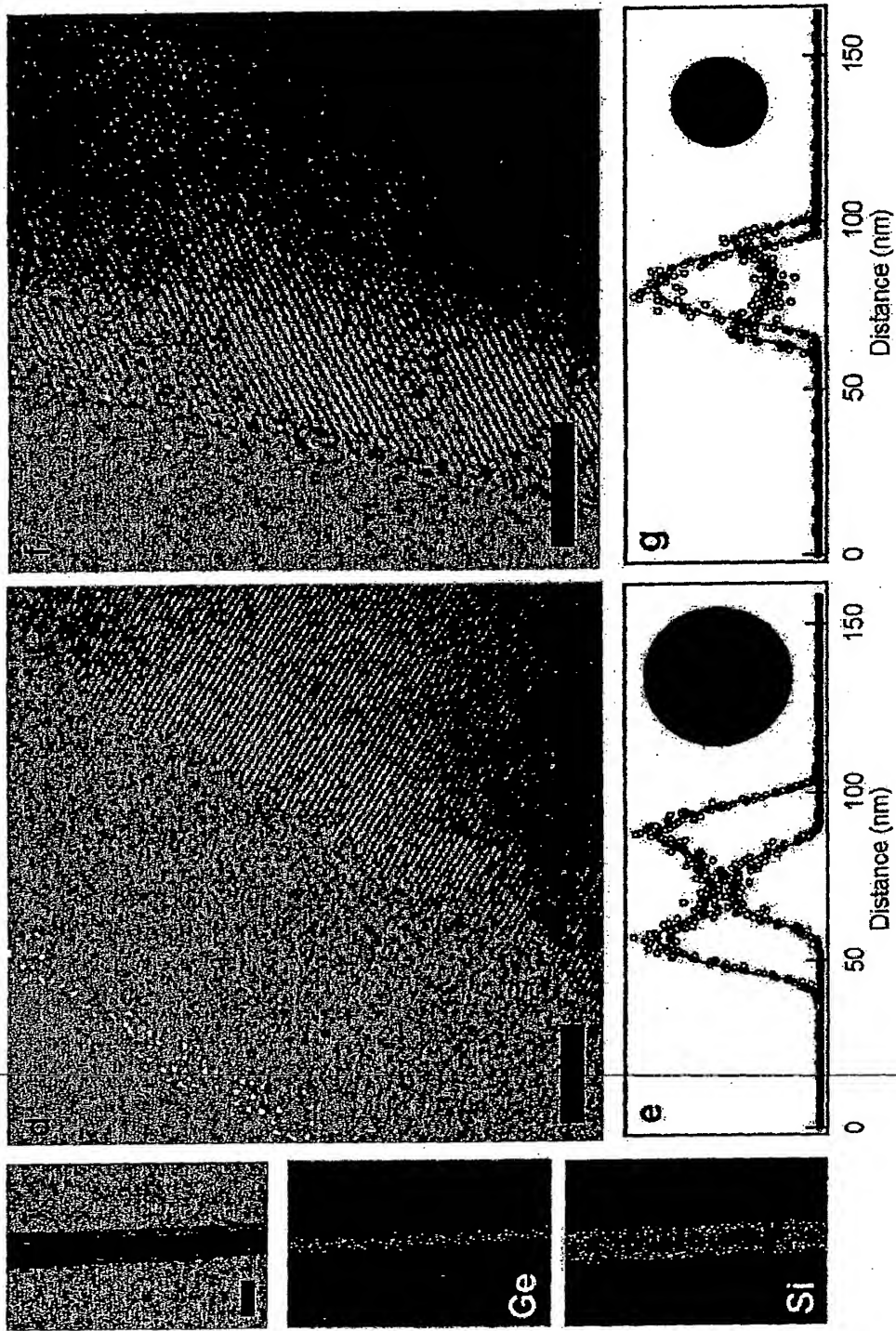


FIG. 13A

FIG. 13B

FIG. 13C

FIG.  
14A

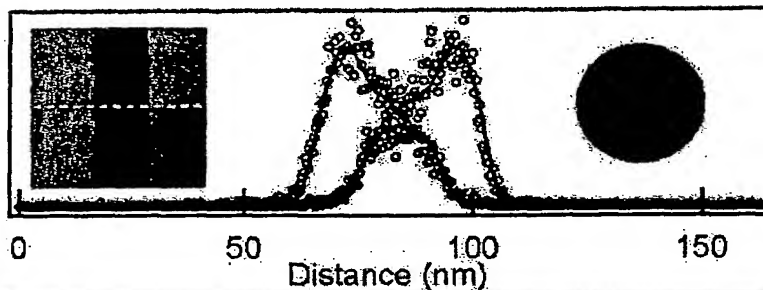


FIG.  
14B

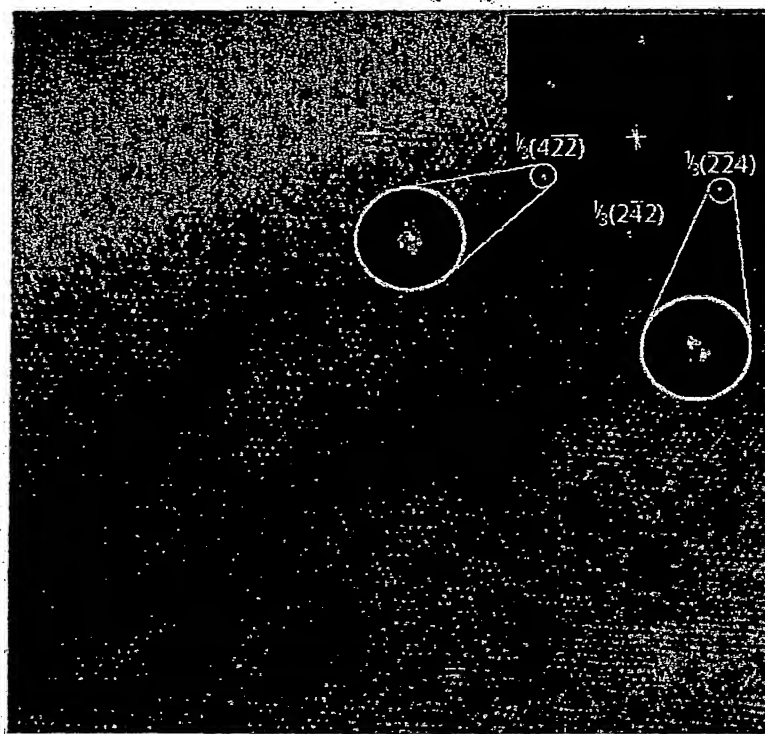


FIG.  
14C

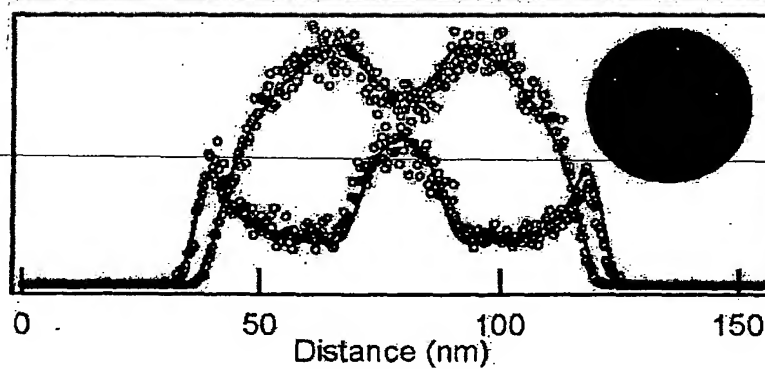


FIG.  
15A

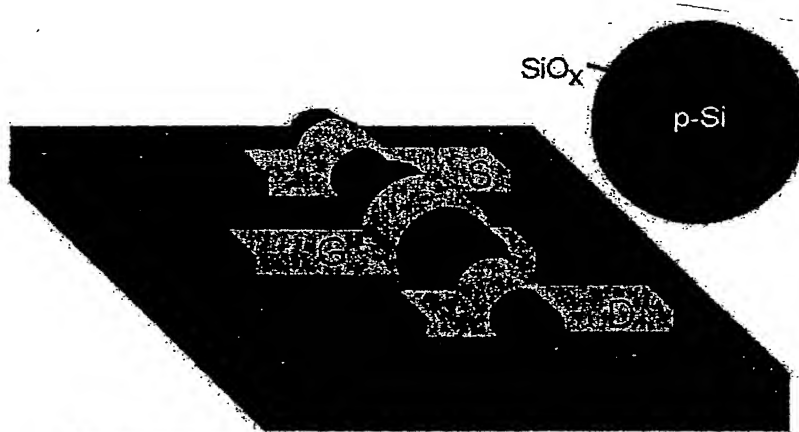


FIG.  
15B

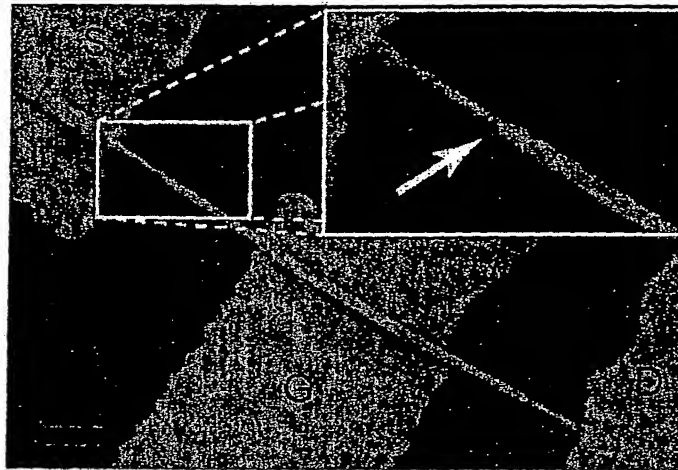
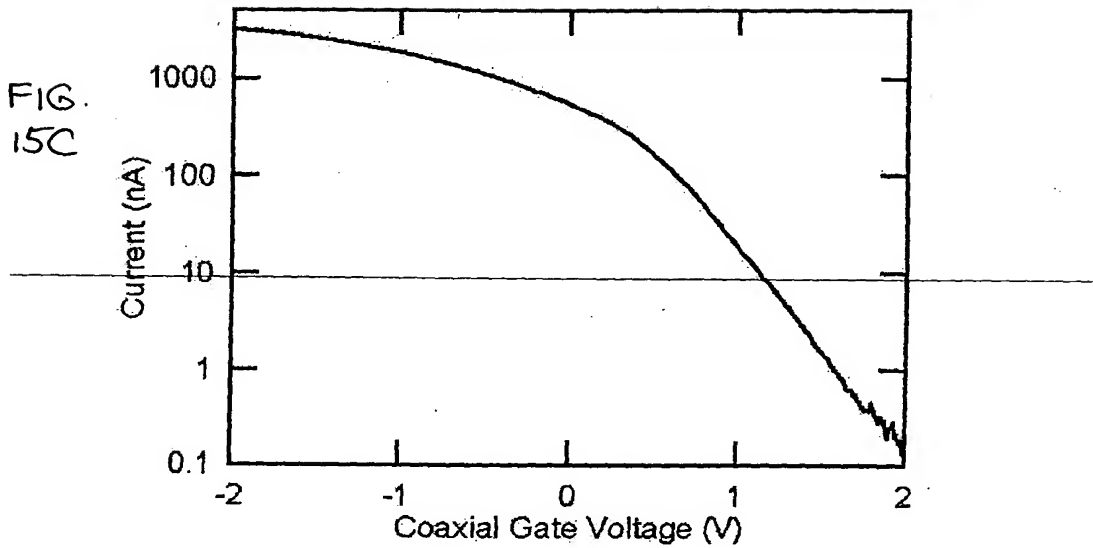
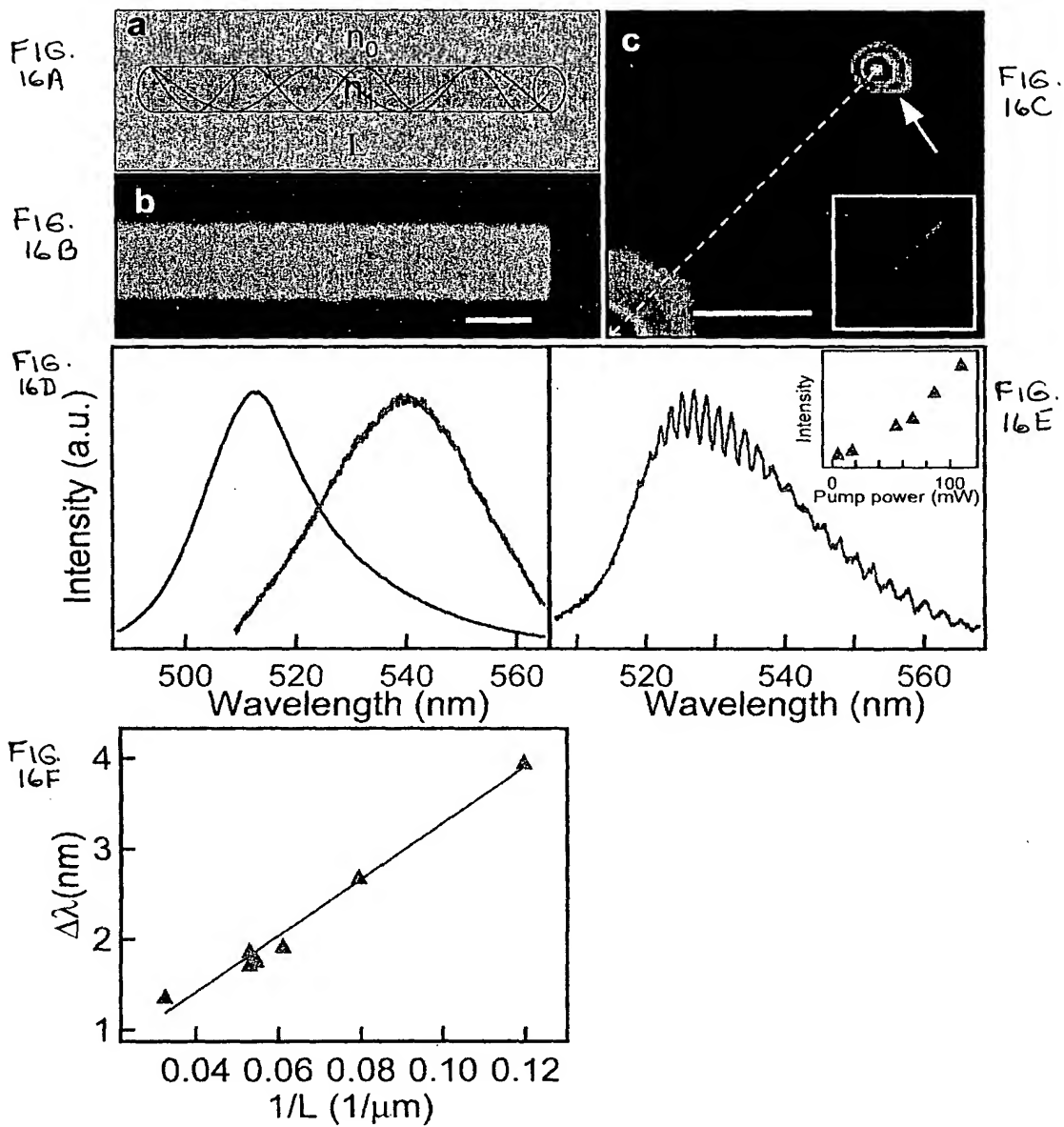
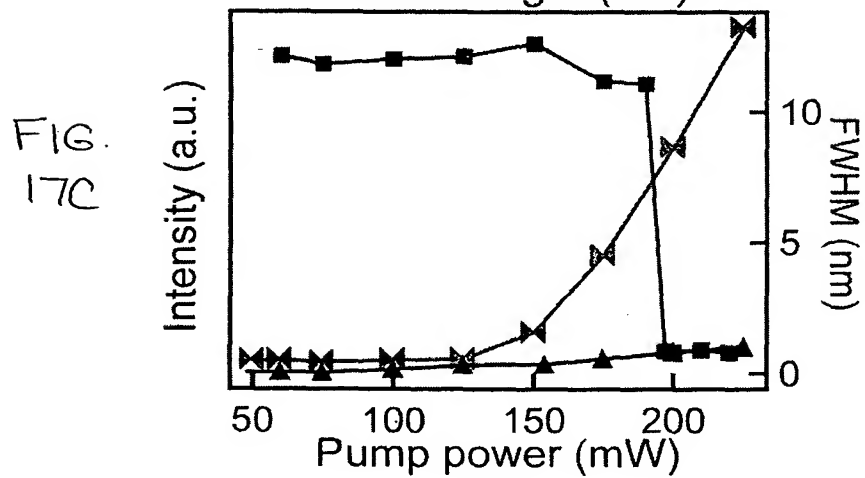
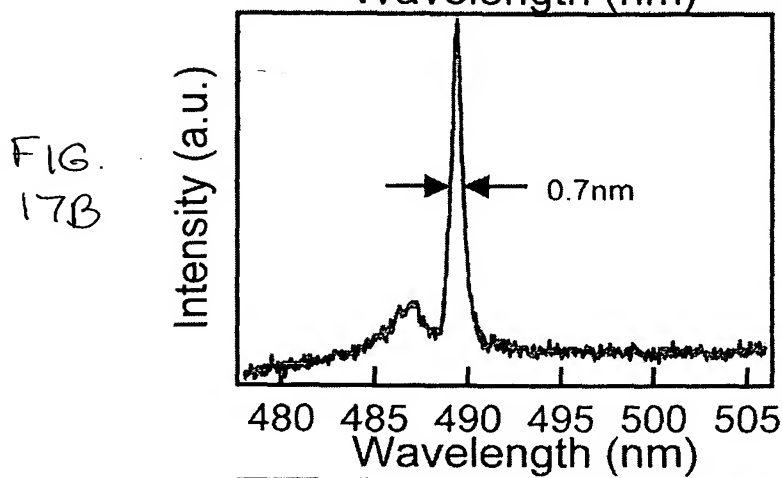
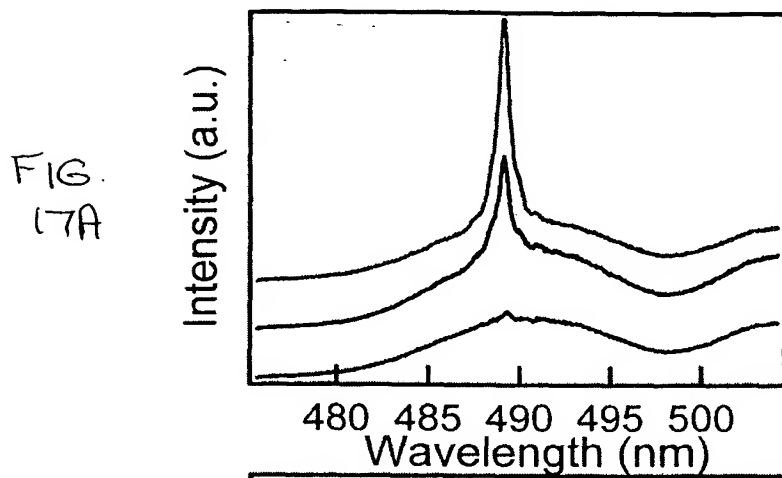


FIG.  
15C







H00498.70203.US

Nanoscale Coherent Optical Components

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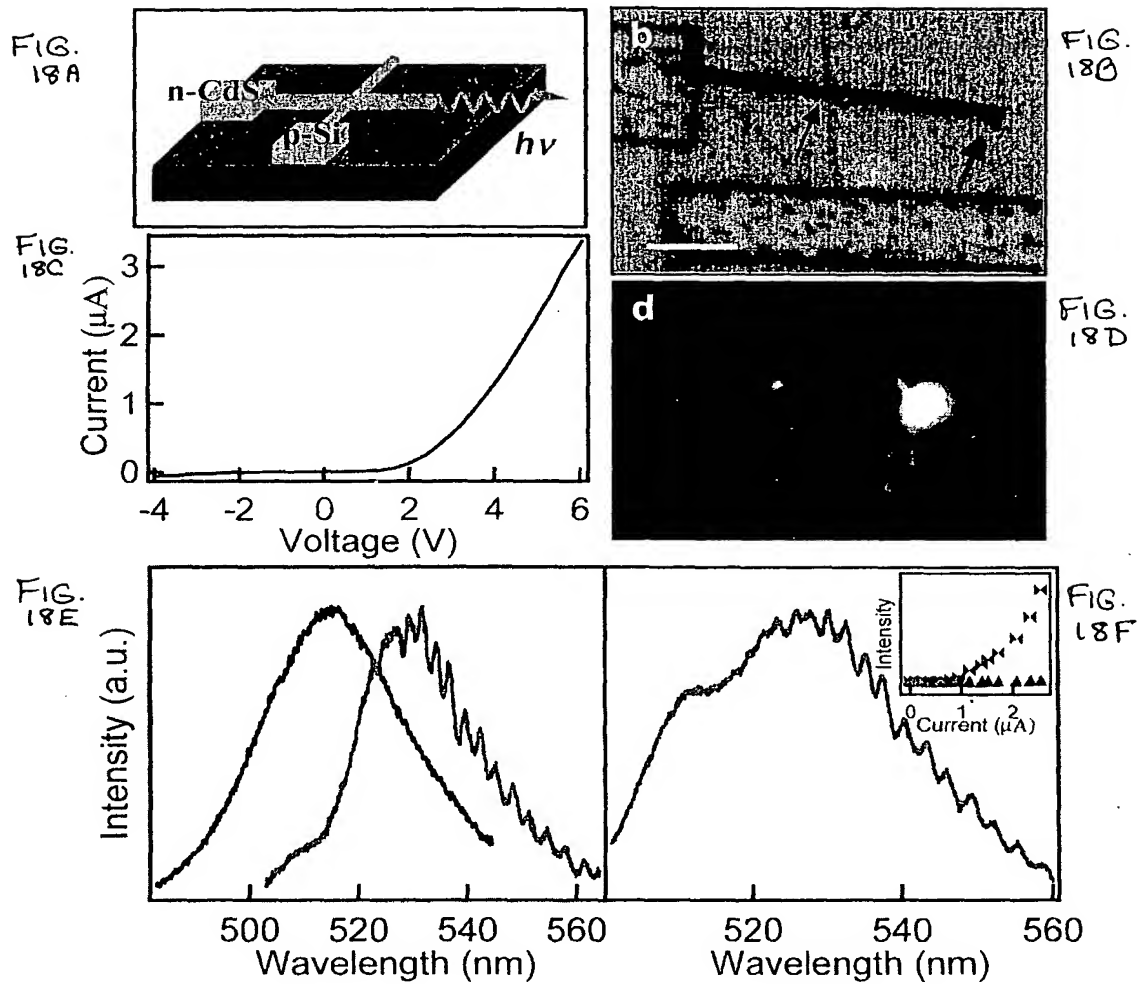
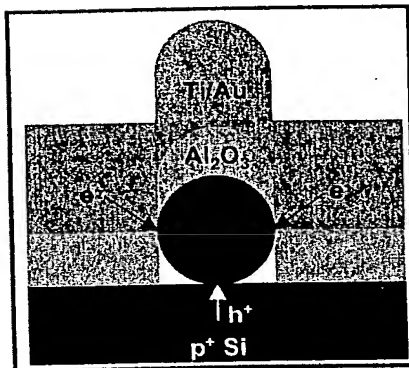
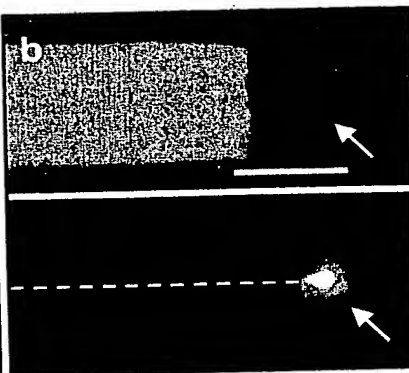
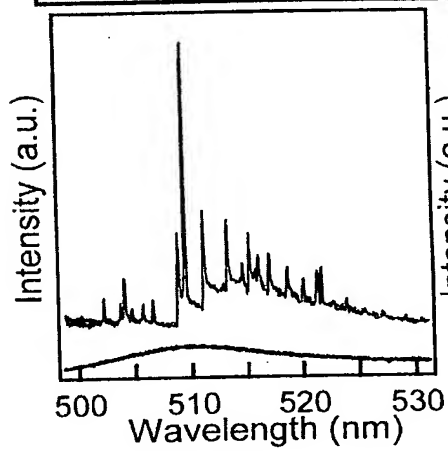
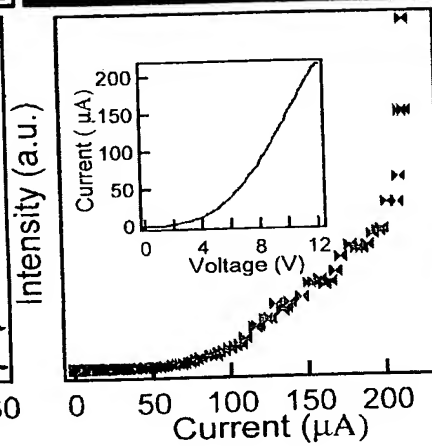




FIG.  
19AFIG.  
19BFIG.  
19CFIG.  
19D

H00498.70203.US

Nanoscale Coherent Optical Components

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Date of Deposit: July 21, 2003

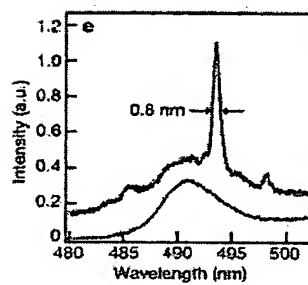
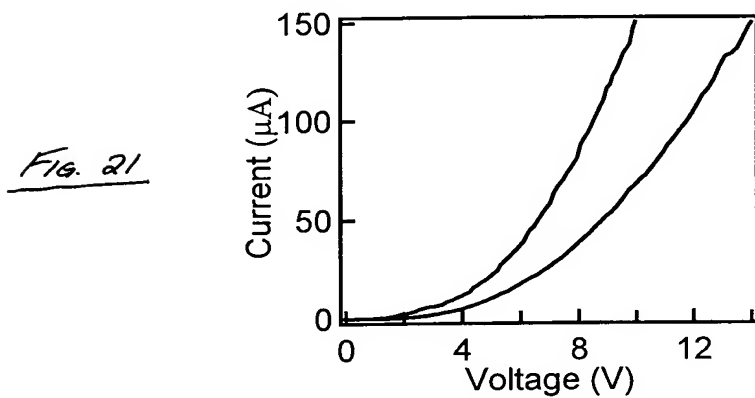
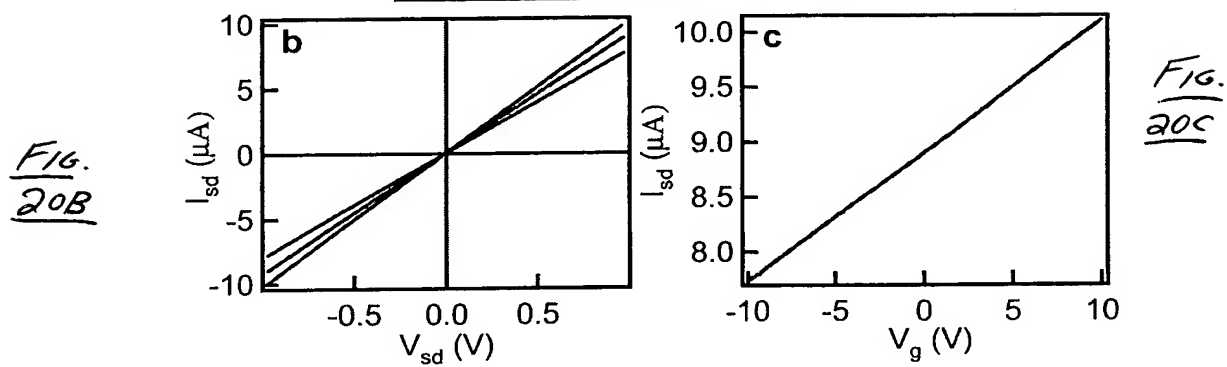
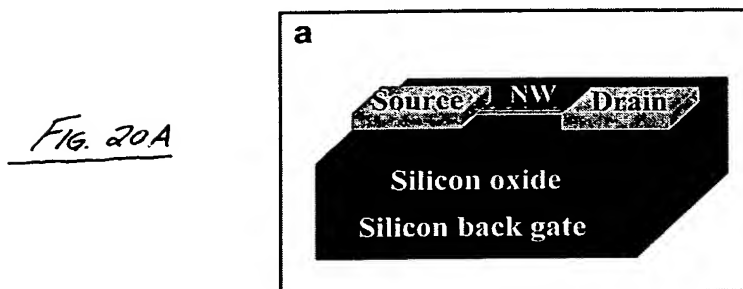


FIG. 19E



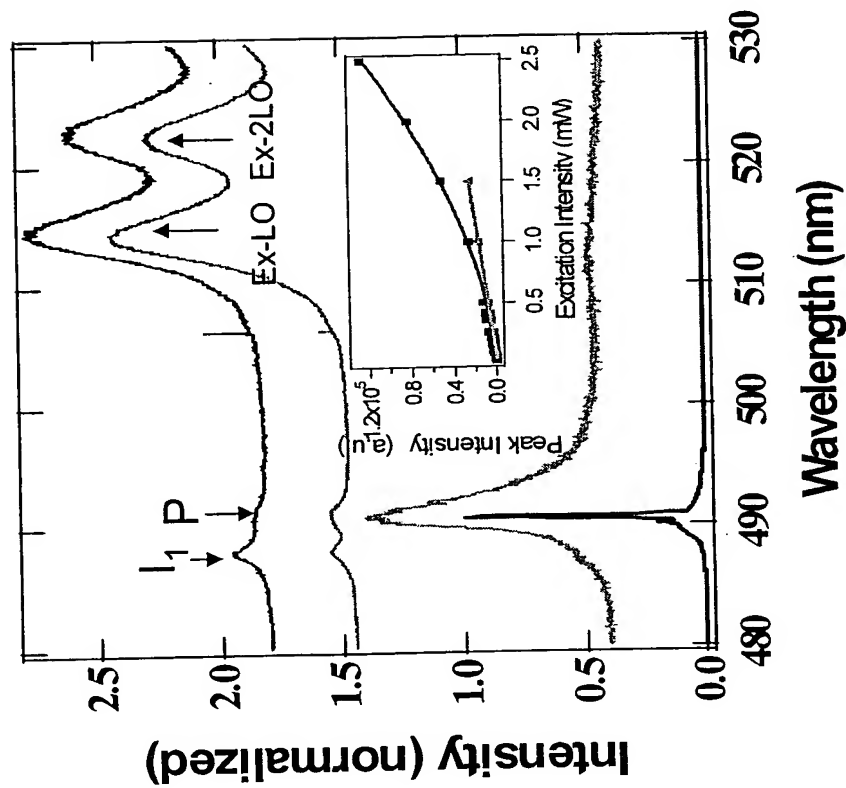


Fig. 22A

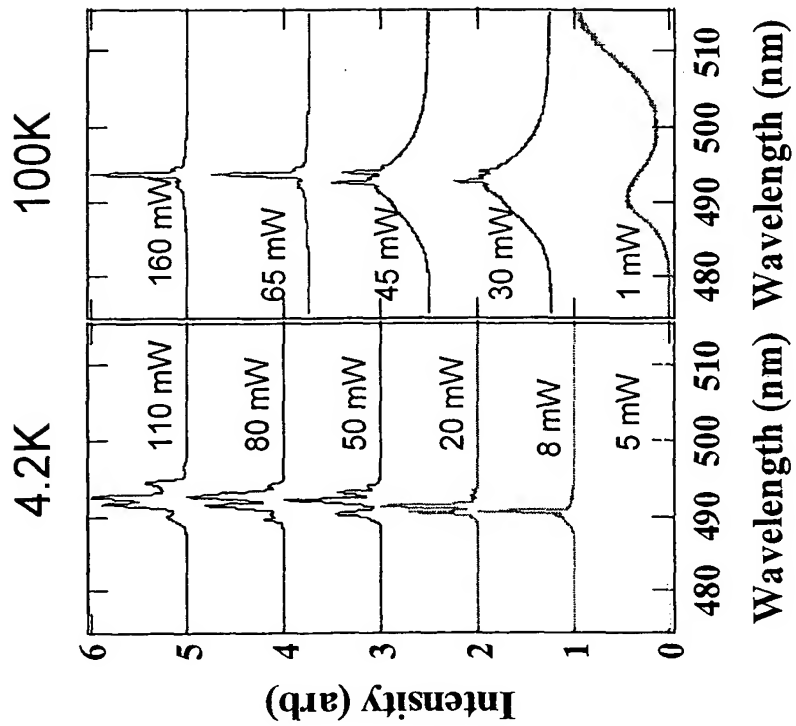


Fig. 22B

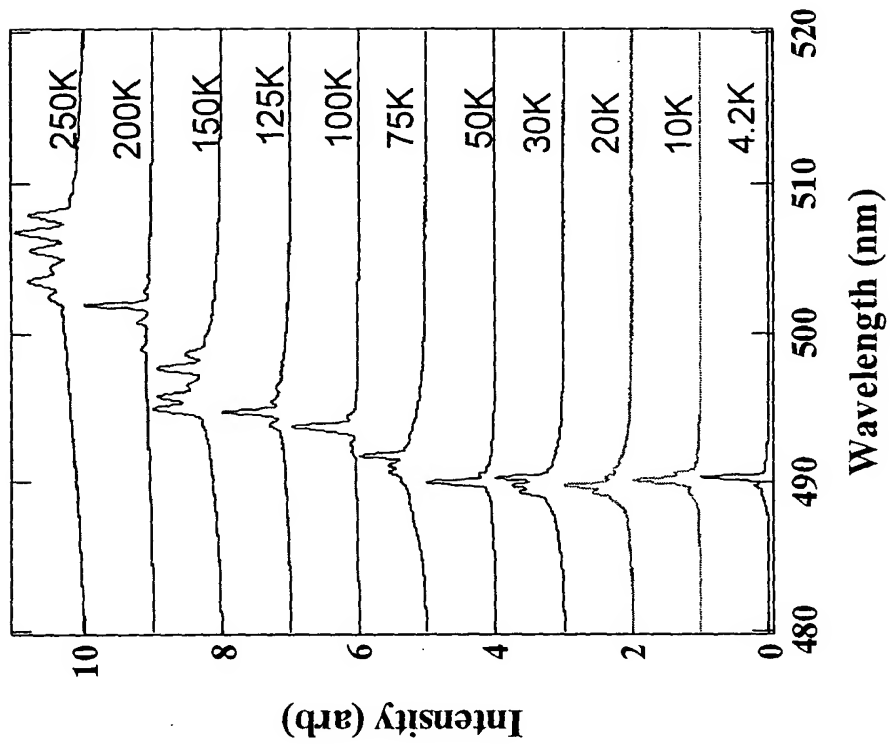


Fig. 220

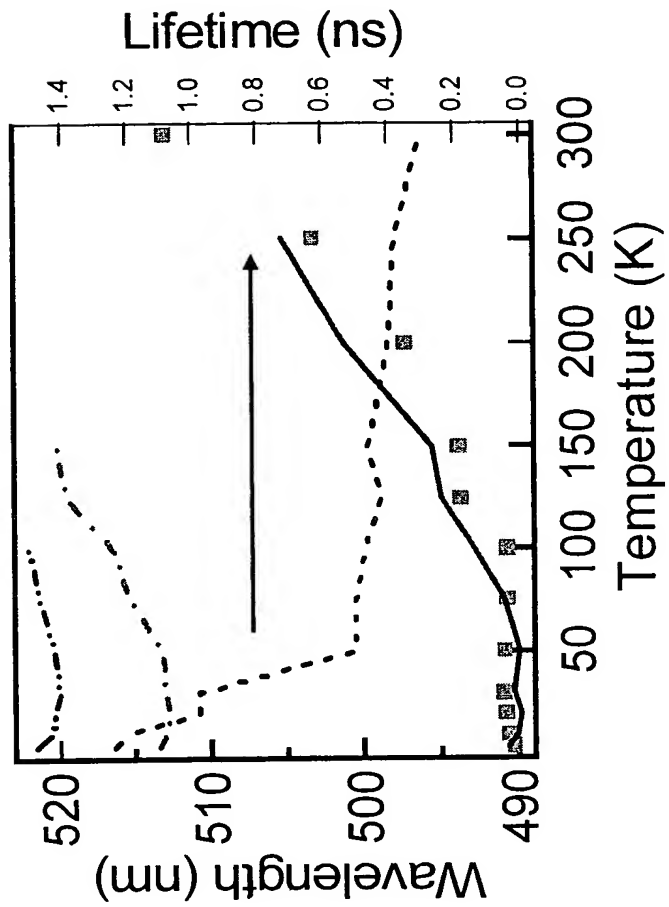


Fig. 22D

Fig. 23A

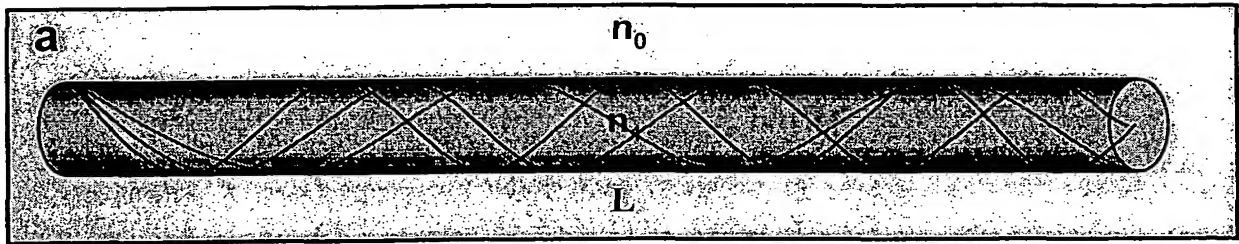


Fig. 23B

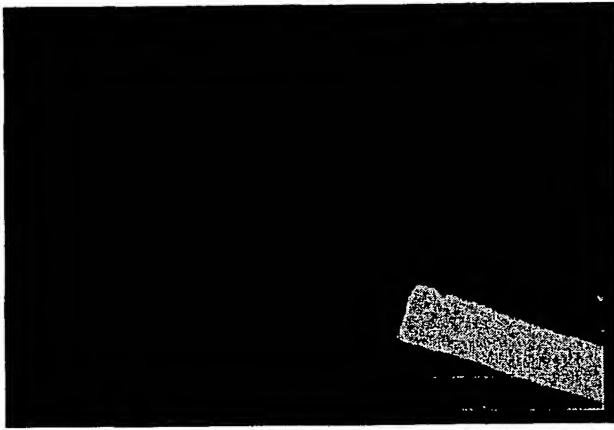


Fig. 23C

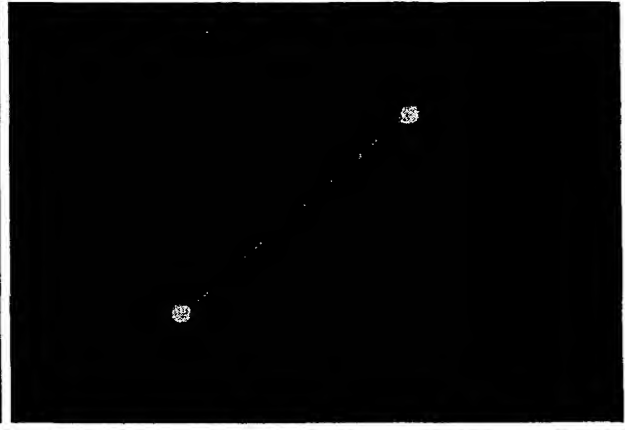


Fig. 23D

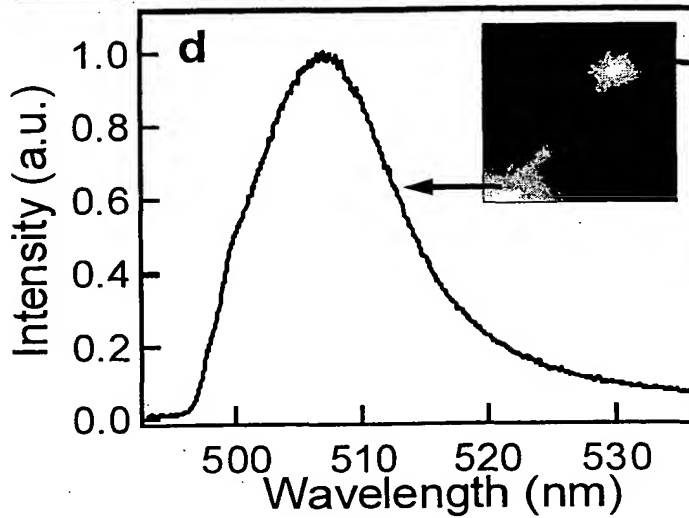


Fig. 23E

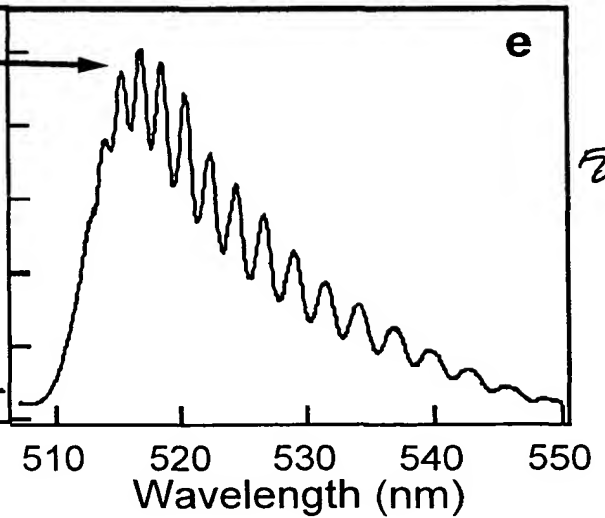
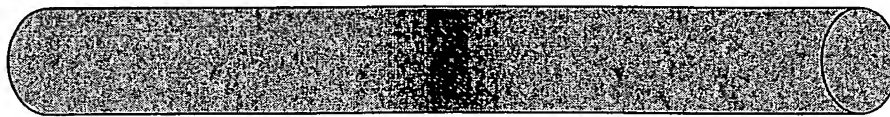
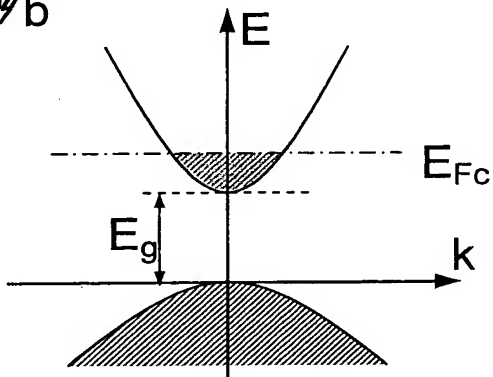




Fig.  
24a Hole injectionFig.  
24bFig.  
24c